

EMERGENCY AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

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DATE: June 8, 2005

AD #: 2005-12-51

- **ROCKWELL INTERNATIONAL (Aircraft Specification No. A-2-575 previously held by NORTH AMERICAN and recently purchased by BOEING)** Models AT-6 (SNJ-2), AT-6A (SNJ-3), AT-6B, AT-6C (SNJ-4), AT-6D (SNJ-5), AT-6F (SNJ-6), BC-1A, SNJ-7, and T-6G Airplanes; and
- **AUTAIR LTD. (Aircraft Specification No. AR-11 previously held by NOORDUYN AVIATION LTD.)** Model Harvard (Army AT-16) Airplanes.

Discussion

What events have caused this AD? The FAA has received a report of a Rockwell International Model SNJ-6 (AT-6F) airplane crash that occurred on May 9, 2005, resulting in two fatalities. The ensuing investigation revealed a large fatigue crack in the failed lower inboard wing attach angle. The aircraft was used for hire in aerobatic training.

What are the consequences if the condition is not corrected? A fatigue crack may occur in the upper and/or lower attach angles that join the center and outer wings. If the crack is allowed to progress, the wing will fail with consequent loss of control of the aircraft.

Has the manufacturer issued service information? The procedures to do the actions are included in this emergency AD. The type certificate holders have not issued any service information that addresses this safety issue.

What has FAA decided? After careful review of all available information related to the subject presented above, FAA has determined that inspections and possible replacements of the wing attach angles of both wings are necessary on the airplanes listed in the Applicability section of this AD.

What does this AD require? This AD requires immediate and repetitive inspections of the inboard and outboard, upper and lower wing attach angles (except for the nose angles) of both wings for fatigue cracks; and, if any crack is found, replacement of the cracked angle with a new angle.

Did FAA coordinate the technical aspects of this AD with anyone outside the agency? In preparation of this rule, we contacted type clubs and aircraft operators to obtain technical information and information on operational and economic impacts. We have included, in the rulemaking docket, a discussion of information that may have influenced this action.

Will FAA take future rulemaking action on this subject? The National Transportation Safety Board (NTSB) is still investigating the accident. When all information from the investigation becomes available, FAA may take additional AD action to address continued operational safety of the affected airplanes. This could include, but is not limited to, inspections, modifications, and/or replacement of critical components.

Presentation of the Actual AD

This rule is issued under 49 U.S.C. Section 44701 (formerly section 601 of the Federal Aviation Act of 1958), pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this action.

2005-12-51 ROCKWELL INTERNATIONAL (Aircraft Specification No. A-2-575 previously held by NORTH AMERICAN and recently purchased by BOEING) and AUTAIR LTD. (Aircraft Specification No. AR-11 previously held by NOORDUYN AVIATION LTD.):

When Does This AD Become Effective?

- (a) This emergency AD becomes effective upon receipt.

Are Any Other ADs Affected By This Action?

- (b) None.

What Airplanes Are Affected by This AD?

- (c) This AD affects Models AT-6 (SNJ-2), AT-6A (SNJ-3), AT-6B, AT-6C (SNJ-4), AT-6D (SNJ-5), AT-6F (SNJ-6), BC-1A, Harvard (Army AT-16), SNJ-7, and T-6G airplanes, all serial numbers, that are certificated in any category.

What is the Unsafe Condition Presented in This AD?

- (d) This AD is the result of a report of a Rockwell International Model SNJ-6 (AT-6F) airplane crash that occurred on May 9, 2005, resulting in two fatalities. We are issuing this AD to detect and correct any fatigue crack in the inboard and outboard, upper and lower wing attach angles (except for the nose angles) of either wing, which could result in failure of the wing. This failure could lead to loss of control of the aircraft.

What Must I do to Address This Problem?

- (e) To address this problem, you must do the following:

Actions	Compliance	Procedures
(1) Perform a fluorescent penetrant inspection of all inboard and outboard, upper and lower wing attach angles (except for the nose angles) of both wings for cracks. Replace the angles as necessary.	(i) Initially inspect before further flight after receipt of this emergency AD, unless previously done within the last 15 hours time-in-service (TIS).	Follow the Appendix to this AD.

	<p>(ii) Repetitively inspect thereafter every 200 hours TIS.</p> <p>(iii) Replace angles as necessary prior to further flight after the inspection where cracks are found.</p>	
<p>(2) <u>For all airplanes</u>: Report to FAA the results of the initial inspection required by paragraph (e)(1) of this AD even if no damage is found and even if the inspection was previously done. The Office of Management and Budget (OMB) approved the information collection requirements contained in this regulation under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 and those following sections.) and assigned OMB Control Number 2120-0056.</p>	<p>Within 7 days after the inspection required by paragraph (e)(1) of this AD or within 7 days after receipt of this emergency AD, whichever occurs later.</p>	<p>Send the form (Figure 1 of this AD) to FAA, Los Angeles ACO, 3960 Paramount Blvd., Lakewood, CA 90712; facsimile: (562) 627-5210. E-mail: fred.guerin@faa.gov.</p>
<p>(3) You may operate the airplane to return/position the airplane to a home base, hangar, maintenance facility, etc., for the purpose of doing the inspection required by this AD provided you follow the limitations in paragraph (f) of this AD.</p>	<p>You may operate the airplane up to 10 hours TIS provided the flight(s) occur(s) no later than 30 days after June 8, 2005. This is a one-time provision.</p>	<p>Not Applicable.</p>
<p>(4) Special flight permits are allowed for this AD. See paragraph (f) of this AD for restrictions.</p>	<p>Use the procedures in 14 CFR part 39 and the restrictions in paragraph (f) of this AD.</p>	<p>Not Applicable.</p>

Wing Attachment Angle Inspection Report for: Models AT-6 (SNJ-2), AT-6A (SNJ-3), AT-6B, AT-6C (SNJ-4), AT-6D (SNJ-5), AT-6F (SNJ-6), BC-1A, Harvard (Army AT-16), SNJ-7, And T-6G Airplanes	
Date: _____ Model of aircraft: _____ Aircraft serial number: _____ Aircraft registration number: _____ Hours on airframe (report known or estimated): _____ Cracks found (yes or no): _____ <div style="margin-left: 40px;"> If yes, describe number of cracks, length, location, which angle it occurred (use another sheet if necessary): _____ _____ _____ </div> Type of operation of aircraft (aerobatic, non-aerobatic, for hire, etc.) _____ Address and phone number at aircraft location (FBO or local contact) _____ _____ _____ Name, address, and phone number of aircraft owner (if different from local contact): _____ _____ _____ _____	
Send to:	Fred Guerin, ANM-120L Federal Aviation Administration Los Angeles Aircraft Certification Office 3960 Paramount Blvd Lakewood, CA 90712 E-mail: fred.guerin@faa.gov Facsimile: (562) 627-5210

Figure 1

What Are the Flight Restrictions Specified in Paragraphs (e)(3) and (e)(4) of This AD?

(f) During the time allowed before compliance with the initial inspection required by paragraph (e)(1) of this AD, or for any approved special flight permit, you must adhere to the following limitations:

- (1) Acrobatic maneuvers are prohibited.
- (2) Flight into known or forecast moderate or severe turbulence is prohibited.
- (3) Day visual flight rules (VFR) operation only.
- (4) Single pilot operation only (Passengers prohibited).

May I Request an Alternative Method of Compliance?

(g) You may request a different method of compliance or a different compliance time for this AD by following the procedures in 14 CFR 39.19. Unless FAA authorizes otherwise, send your request to your principal Flight Standards inspector. The principal inspector may add comments and will send your request to the Manager, Los Angeles Aircraft Certification Office (ACO), FAA. For information on any already approved alternative methods of compliance, contact Fred Guerin, Aerospace Engineer, FAA, Los Angeles ACO, 3960 Paramount Blvd., Lakewood, CA 90712; telephone: (562) 627-5232; facsimile: (562) 627-5210.

Who Should I Contact with Questions Regarding This AD Action?

(h) Contact Fred Guerin, Aerospace Engineer, FAA, Los Angeles ACO, 3960 Paramount Blvd., Lakewood, CA 90712; telephone: (562) 627-5232; facsimile: (562) 627-5210.

Issued in Kansas City, Missouri, on June 8, 2005.

Kim Smith,
Acting Manager, Small Airplane Directorate,
Aircraft Certification Service.

Appendix to AD 2005-12-51

Wing Attachment Angle Inspection for:

Models AT-6 (SNJ-2), AT-6A (SNJ-3), AT-6B, AT-6C (SNJ-4), AT-6D (SNJ-5), AT-6F (SNJ-6), BC-1A, Harvard (Army AT-16), SNJ-7, and T-6G Airplanes

Procedures:

- (1) Remove all outboard wing attach angle covers.
- (2) Support outboard wing on appropriate stands to relieve the weight on the wing attach bolts.
- (3) On the upper wing attach angles, except for the forward and aft five bolts on the angle, remove all of the through bolts that attach the outboard wing (Do not remove bolts in the nose angle).
- (4) Remove all paint down to the bare metal using solvent on outer surface of affected angles. Do not sand or use media blasting or use any method that would cover up or contaminate a crack. This means not using Scotchbrite or a similar abrasive, which can contaminate a crack for penetrant inspection.
- (5) Use the penetrant manufacturer's cleaner, acetone, or 90-percent or more alcohol solution to do a final surface cleaning preparation step before the fluorescent penetrant inspection.
- (6) Perform an inspection of the outboard and inboard wing attach angles using a high sensitivity fluorescent dye penetrant inspection procedure per the penetrant manufacturer's instructions. Pay particular attention to cracks that may be present in the edge of the spot faces closest to the radius of the angle. Also pay attention to any small cracks that may be emanating from the edge of the fasteners in any row of installed fasteners. Choose a commercially available fluorescent inspection method that requires the use of an ultraviolet (black light) in a darkened environment. Do not use dye penetrant, which is read under normal lighting conditions.
- (7) Check the wing attachment angle for condition and for security of rivets and bolts.
- (8) If no cracks or major defects are found, replace nuts and bolts following directions in paragraphs (11) and (12) of this appendix of this AD, clean angle, and apply a corrosion protectant coating paint (Alodine alone is not acceptable).
- (9) On the upper wing, remove the forward and aft five bolts that were previously left in place, and inspect the remaining uninspected portion of the angles following the above procedure.
- (10) On the lower wings, repeat the inspection on the bottom two attach angles in the same sequence as on the top angles.
- (11) When replacing bolts in angles, use only nuts, bolts, and torque values as specified in "Erection and Maintenance No. AN01-60FFA-2" or "Erection and Maintenance No. AN01-60F-2" as applicable to the aircraft model. Bolts may be reused if upon inspection they are found to be in airworthy condition. Nuts may be reused as long as the nylon-locking feature is functional, and they cannot be turned onto the bolt with fingers. Torque values for 1/4-inch bolts are 60-65 inch/lb, and for 5/16-inch bolts are 100-105 inch/lb. These torque values supersede those in the manuals.

Appendix to AD 2005-12-51 (continued)

(12) To assure that the nuts do not contact the shoulder of the wing attach bolts and cause an under torque condition, assure that no more than two threads are protruding from nut after torquing. If more than two threads are protruding, replace with a bolt of the correct length.

(13) If any cracks are found, replace the angle with a new part. Send all cracked angles to Fred Guerin, Aerospace Engineer, FAA, Los Angeles ACO, 3960 Paramount Blvd., Lakewood, CA 90712.